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NEWS 7	DEC 21	IPC search and display fields enhanced in CA/CAplus with the IPC reform
NEWS 8	DEC 23	New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/ USPAT2
NEWS 9	JAN 13	IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
NEWS 10	JAN 13	New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to INPADOC
NEWS 11	JAN 17	Pre-1988 INPI data added to MARPAT
NEWS 12	JAN 17	IPC 8 in the WPI family of databases including WPIFV
NEWS 13	JAN 30	Saved answer limit increased
NEWS 14	JAN 31	Monthly current-awareness alert (SDI) frequency added to TULSA
NEWS 15	FEB 21	STN AnaVist, Version 1.1, lets you share your STN AnaVist visualization results
NEWS 16	FEB 22	Status of current WO (PCT) information on STN
NEWS 17	FEB 22	The IPC thesaurus added to additional patent databases on STN
NEWS 18	FEB 22	Updates in EPFULL; IPC 8 enhancements added
NEWS 19	FEB 27	New STN AnaVist pricing effective March 1, 2006
NEWS 20	FEB 28	MEDLINE/LMEDLINE reload improves functionality
NEWS 21	FEB 28	TOXCENTER reloaded with enhancements
NEWS 22	FEB 28	REGISTRY/ZREGISTRY enhanced with more experimental spectral property data
NEWS 23	MAR 01	INSPEC reloaded and enhanced
NEWS 24	MAR 03	Updates in PATDPA; addition of IPC 8 data without attributes

NEWS EXPRESS FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a,
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005.
V8.0 AND V8.01 USERS CAN OBTAIN THE UPGRADE TO V8.01a AT
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FILE 'INSPEC' ENTERED AT 18:14:35 ON 03 MAR 2006
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=> s virtual (6w) wall
L1          283 VIRTUAL (6W) WALL

=> s l1 and label?
L2            1 L1 AND LABEL?

=> display l2 1 ibib abs

L2   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2004:394333  CAPLUS
DOCUMENT NUMBER:          140:377154
TITLE:                    Microfluidic system including a virtual
                          wall fluid interface port for interfacing
                          fluids with the microfluidic system
INVENTOR(S):              Gilbert, John R.; Chiem, Nghia H.
PATENT ASSIGNEE(S):       Teragenics, Inc., USA
SOURCE:                   U.S. Pat. Appl. Publ., 40 pp., Cont.-in-part of U.S.
                          Ser. No. 28,852.
                          CODEN: USXXCO
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   11
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.          DATE
     ---------------      ----   --------    --------------------     --------
     US 2004091398         A1    20040513    US 2003-607287           20030625
     US 2003007898         A1    20030109    US 2001-28852            20011221
PRIORITY APPLN. INFO.:                       US 2001-28852        A2  20011221
                                             US 2002-391872P      P   20020625
                                             US 2001-299515P      P   20010620
AB   A fluid interface port in a microfluidic system and a method of forming
     the fluid interface port is provided.  The fluid interface port comprises
     an opening formed in the side wall of a microchannel sized and dimensioned
     to form a virtual wall when the microchannel is filled
     with a first liquid  The fluid interface port is utilized to perform a
     labeling operation on a sample.
```

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=> FIL STNGUIDE
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                        11.53      11.74

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)              SINCE FILE      TOTAL
                                                           ENTRY    SESSION
CA SUBSCRIBER PRICE                                        -0.75      -0.75

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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Feb 24, 2006 (20060224/UP).

=> s virtual (s) wall
             0 VIRTUAL
             0 WALL
L3           0 VIRTUAL (S) WALL

=> s (interface or port) (s) label?
             0 INTERFACE
             0 PORT
           172 LABEL?
L4           0 (INTERFACE OR PORT) (S) LABEL?

=> file caplus compendex inspec
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.24      11.98

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)              SINCE FILE      TOTAL
                                                           ENTRY    SESSION
CA SUBSCRIBER PRICE                                         0.00      -0.75

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=> s (interface or port) (s) label?
L5        2605 (INTERFACE OR PORT) (S) LABEL?

=> s l5 and microfluid?
L6          18 L5 AND MICROFLUID?

=> display l6 1-18 ibib abs

L6   ANSWER 1 OF 18  CAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2005:625531  CAPLUS
DOCUMENT NUMBER:          143:381973
```

TITLE: Diffusion based analysis in a sheath flow microchannel: the sheath flow T-sensor
AUTHOR(S): Munson, Matthew S.; Hawkins, Kenneth R.; Hasenbank, Melissa S.; Yager, Paul
CORPORATE SOURCE: Department of Bioengineering, University of Washington, Seattle, WA, USA
SOURCE: Lab on a Chip (2005), 5(8), 856-862
CODEN: LCAHAM; ISSN: 1473-0197
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This paper describes a **microfluidic** channel that allows for diffusion-based anal. of adsorbing species without passivation of the channel surfaces. The sheath flow configuration was used to measure the diffusion coefficient of fluorescently **labeled** species from their spatial distribution within the microchannel by analyzing the derivative of the intensity profile at the **interface** between two distinct core fluids. Measurements for both a small mol. (rhodamine B) and an intermediate-sized protein (wheat germ agglutinin) were made, demonstrating the utility of the sheath flow T-sensor.
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:352492 CAPLUS
DOCUMENT NUMBER: 143:56062
TITLE: Interfacial stabilization of organic-aqueous two-phase microflows for a miniaturized DNA extraction module
AUTHOR(S): Reddy, Varun; Zahn, Jeffrey D.
CORPORATE SOURCE: Department of Bioengineering, Materials Research Institute, Pennsylvania State University, University Park, PA, 16802, USA
SOURCE: Journal of Colloid and Interface Science (2005), 286(1), 158-165
CODEN: JCISA5; ISSN: 0021-9797
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Organic-aqueous liquid (phenol) extraction is one of many standard techniques to efficiently purify DNA directly from cells. The cell components naturally distribute themselves into the two fluid phases in order to minimize interaction energies of the biol. components with the surrounding solvents. The membrane components and protein partition to the interface between the organic and aqueous phases while the DNA stays in the aqueous phase. The aqueous phase is then removed with a purified DNA sample. This work studies the first steps towards miniaturizing this liquid extraction technique in a **microfluidic** device. The first step is to understand how the two liquid phases behave in microchannels. Due to the interfacial tension between the two liquid phases, novel approaches must be examined in order to obtain interfacial stability under flow conditions. The stability of the organic-aqueous interface is improved by reducing the interfacial tension between the two phases by incorporating a surfactant into the aqueous phase. The variation of the interfacial tension as a function of surfactant concentration is also quantified in this work. This has led to the ability to create stable stratified microflows in both a dual inlet and three inlet **microfluidic** systems. Also, the first step in understanding biol. interactions at the organic-aqueous **interface** is investigated using a fluorescently **labeled** bovine serum albumin protein.
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:435499 CAPLUS
TITLE: High Speed, High Sensitivity Capillary Separations for Biological Analysis
AUTHOR(S): Hapuarachchi, Suminda; Aspinwall, Craig A.
CORPORATE SOURCE: Chemistry, University of Arizona, Tucson, AZ, 85721, USA
SOURCE: Abstracts, Joint Regional Meeting of the Northwest and Rocky Mountain Sections of the American Chemical Society, Logan, UT, United States, June 6-9 (2004), GEN-045. American Chemical Society: Washington, D. C. CODEN: 69FLZI
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB Abstract Real time anal. of complex biol. mixts. is of paramount importance in the biomedical community. Rapid separation of such mixts. offers a higher level of chemical information than traditional sensors, while maintaining sufficient temporal resolution to map the dynamics within the system. To date such sepns. have been realized predominantly with capillary electrophoresis (CE) utilizing a range of sample interface technologies. Here, we present a novel **interface** based on photolysis of a fluorogenic **label** to introduce sub-nL samples that are subsequently analyzed with millisecond to second temporal resolution This method has been used to analyze neurotransmitters and proteins with LODs below 5 nM with high efficiency. We are working further to extend technol. through a combination of **microfluidics** and novel detection schemes in order to improve the temporal resolution and the efficiency.

L6 ANSWER 4 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:394333 CAPLUS
DOCUMENT NUMBER: 140:377154
TITLE: **Microfluidic** system including a virtual wall fluid interface port for interfacing fluids with the **microfluidic** system
INVENTOR(S): Gilbert, John R.; Chiem, Nghia H.
PATENT ASSIGNEE(S): Teragenics, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 40 pp., Cont.-in-part of U.S. Ser. No. 28,852. CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2004091398	A1	20040513	US 2003-607287		20030625
US 2003007898	A1	20030109	US 2001-28852		20011221
PRIORITY APPLN. INFO.:			US 2001-28852	A2	20011221
			US 2002-391872P	P	20020625
			US 2001-299515P	P	20010620

AB A fluid interface port in a **microfluidic** system and a method of forming the fluid interface port is provided. The fluid interface port comprises an opening formed in the side wall of a microchannel sized and dimensioned to form a virtual wall when the microchannel is filled with a first liquid The fluid **interface port** is utilized to perform a **labeling** operation on a sample.

L6 ANSWER 5 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:740113 CAPLUS
DOCUMENT NUMBER: 140:276650
TITLE: Falling-drop interface for continuous sample

introduction in **microfluidic** chips
AUTHOR(S): Fang, Qun; Jia, Zhi-Jian; Fang, Zhao-Lun
CORPORATE SOURCE: Institute of Microanalytical Systems, Department of Chemistry, Zhejiang University, Hangzhou, Peop. Rep. China
SOURCE: Micro Total Analysis Systems 2002, Proceedings of the μTAS 2002 Symposium, 6th, Nara, Japan, Nov. 3-7, 2002 (2002), Volume 2, 685-687. Editor(s): Baba, Yoshinobu; Shoji, Shuichi; Van den Berg, Albert. Kluwer Academic Publishers: Dordrecht, Neth.
CODEN: 69EMKZ; ISBN: 1-4020-1011-7
DOCUMENT TYPE: Conference
LANGUAGE: English
AB A continuous sample introduction system for chip-based capillary electrophoresis (CE) systems was developed using a falling-drop interface to achieve elec. isolation of the CE chip from the sample introduction system, and minimize sample flow into the sampling channel due to hydrostatic pressure. Effective sample change was achieved in the continuous CE separation of FITC-labeled amino acids by LIF detection with <5% carryover, 20-70 μL sample volume and 5-15 s sample introduction time.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:522159 CAPLUS
DOCUMENT NUMBER: 137:59858
TITLE: Method and apparatus using a surface-selective nonlinear optical technique
INVENTOR(S): Salafsky, Joshua S.
PATENT ASSIGNEE(S): USA
SOURCE: PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2002054071	A1	20020711	WO 2001-US22441		20010717
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
CA 2434076	AA	20020711	CA 2001-2434076		20010717
EP 1358482	A1	20031105	EP 2001-954721		20010717
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR					
JP 2004530105	T2	20040930	JP 2002-554718		20010717
PRIORITY APPLN. INFO.:			US 2001-260261P	P	20010108
			US 2001-260300P	P	20010108
			US 2001-262214P	P	20010117
			WO 2001-US22441	W	20010717

AB A surface-selective nonlinear optical technique, such as second harmonic or sum frequency generation, is used to detect target-probe binding reactions or their effects, at an **interface**, without the use of **labels**. In addition, the direction of the nonlinear light is scattered from the interface in a well-defined direction and therefore its incidence at a detector some distance from the interface may be easily

mapped to a specific and known location at the interface.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 7 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:174219 CAPLUS
DOCUMENT NUMBER: 128:319801
TITLE: Alterations in membrane lipid dynamics of leukemic cells undergoing growth arrest and differentiation: dependency on the inducing agent
AUTHOR(S): Nathan, Ilana; Ben-Valid, Itzchack; Henzel, Ruth; Masalha, Husam; Baram, Stavanit Nemschitz; Dvilansky, Alexander; Parola, Abraham H.
CORPORATE SOURCE: The Unit of Hematology, Faculty of Medical Sciences, Ben-Gurion University of the Negev, Beer Sheva, 84 105, Israel
SOURCE: Experimental Cell Research (1998), 239(2), 442-446
CODEN: ECREAL; ISSN: 0014-4827
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effect of various differentiation inducers on membrane cell dynamics was studied using HL-60 and K562 leukemic cell lines. Membrane lipid dynamics was measured by the steady-state fluorescence polarization (P) method utilizing either 1,6-diphenyl-1,3,5-hexatriene (DPH) or the tri-Me ammonium derivative of DPH (TMA-DPH), which ascertains anchorage of the **label** to the membrane-water-lipid **interface**. Decrease in membrane **microfluidity** was observed in HL-60 cells undergoing differentiation into macrophages by 1,25-dihydroxyvitamin D3 and by K562 cells induced to differentiate by DMSO. Sodium butyrate caused an increase in membrane fluidity in K562 cells undergoing differentiation into erythroid-like cells while in HL-60 cells a dual effect was observed At 0.4 mM concentration, in which the cells were induced to differentiate along the monocyte pathway, a decrease in membrane fluidity was observed, while at 1 mM concentration an increase in membrane fluidity occurred. Interferon-γ (IFN-γ) induced an increase in membrane fluidity in both cell lines. Using HL-60 cells fluorescently labeled by TMA-DPH, similar results indicating fluidization of the membrane following IFN-γ treatment were obtained. Advanced fluorescence lifetime measurements, evaluated either by phase modulation spectrofluorometry or by single photon correlation fluorometry confirmed that the decrease in fluorescence polarization by IFN-γ resulted from membrane fluidization and not from elongation of the probe's excited state lifetime. It is suggested that the inducer mode of action, and not the differentiation route, determine the outcome of changes in membrane microviscosity.
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 18 COMPENDEX COPYRIGHT 2006 EEI on STN
ACCESSION NUMBER: 2005(27):10975 COMPENDEX
TITLE: Detection method for microchip separations.
AUTHOR: Uchiyama, Katsumi (Department of Applied Chemistry Graduate School of Engineering Tokyo Metropolitan University, Hachioji, 192-0397 Tokyo, Japan); Nakajima, Hizuru; Hobo, Toshiyuki
SOURCE: Analytical and Bioanalytical Chemistry v 379 n 3 June 2004 2004.p 375-382
CODEN: ABCNBP ISSN: 1618-2642
PUBLICATION YEAR: 2004
DOCUMENT TYPE: Journal
TREATMENT CODE: Bibliography; Theoretical; Experimental
LANGUAGE: English
AN 2005(27):10975 COMPENDEX

AB The features of analytical systems utilizing **microfluidic** devices, especially detection methods, are described. Electrochemical detection (EC), laser-induced fluorescence (LIF), mass spectrometry (MS), and chemical luminescence (CL) methods are covered. EC enables detection without **labeling** and has been used in recent years because of its low cost and sensitivity. LIF is the most generally used detection method in microchip separations. Use of LED as an excitation source for fluorescence measurement was also developed for the purpose of miniaturization of the entire system, including detection and separation. Although MS enables highly sensitive analysis, the **interface** between MS and micro channels is still under examination. This review with fifty-two references introduces interesting detection methods for microchip separations. Related separation methods using **microfluidic** devices are also discussed. $CPY Springer-Verlag 2004. 52 Refs.

L6 ANSWER 9 OF 18 COMPENDEX COPYRIGHT 2006 EEI on STN
ACCESSION NUMBER: 2005(19):5084 COMPENDEX
TITLE: Interfacial stabilization of organic-aqueous two-phase microflows for a miniaturized DNA extraction module.
AUTHOR: Reddy, Varun (Department of Bioengineering Materials Research Institute Pennsylvania State University, University Park, PA 16802, United States); Zahn, Jeffrey D.
SOURCE: Journal of Colloid and Interface Science v 286 n 1 Jun 1 2005 2005.p 158-165
CODEN: JCISA5 ISSN: 0021-9797
PUBLICATION YEAR: 2005
DOCUMENT TYPE: Journal
TREATMENT CODE: Theoretical
LANGUAGE: English
AN 2005(19):5084 COMPENDEX
AB Organic-aqueous liquid (phenol) extraction is one of many standard techniques to efficiently purify DNA directly from cells. The cell components naturally distribute themselves into the two fluid phases in order to minimize interaction energies of the biological components with the surrounding solvents. The membrane components and protein partition to the **interface** between the organic and aqueous phases while the DNA stays in the aqueous phase. The aqueous phase is then removed with a purified DNA sample. This work studies the first steps towards miniaturizing this liquid extraction technique in a **microfluidic** device. The first step is to understand how the two liquid phases behave in microchannels. Due to the interfacial tension between the two liquid phases, novel approaches must be examined in order to obtain interfacial stability under flow conditions. The stability of the organic-aqueous **interface** is improved by reducing the interfacial tension between the two phases by incorporating a surfactant into the aqueous phase. The variation of the interfacial tension as a function of surfactant concentration is also quantified in this work. This has led to the ability to create stable stratified microflows in both a dual inlet and three inlet **microfluidic** systems. Also, the first step in understanding biological interactions at the organic-aqueous **interface** is investigated using a fluorescently **labeled** bovine serum albumin protein. $CPY 2005 Elsevier Inc. All rights reserved. 23 Refs.

L6 ANSWER 10 OF 18 COMPENDEX COPYRIGHT 2006 EEI on STN
ACCESSION NUMBER: 2005(5):3437 COMPENDEX
TITLE: Hand-held microanalytical instrument for chip-based electrophoretic separations of proteins.
AUTHOR: Renzi, Ronald F. (Sandia National Laboratories, Livermore, CA 94551-0969, United States); Stamps, James; Horn, Brent A.; Ferko, Scott; VanderNoot, Victoria A.; West, Jay A. A.; Cracker, Robert;

Wiedenman, Boyd; Yee, Daniel; Fruetel, Julia A.
SOURCE: Analytical Chemistry v 77 n 2 Jan 15 2005 2005.p 435-441
CODEN: ANCHAM ISSN: 0003-2700
PUBLICATION YEAR: 2005
DOCUMENT TYPE: Journal
TREATMENT CODE: Theoretical; Experimental
LANGUAGE: English
AN 2005(5):3437 COMPENDEX
AB The design, fabrication, and demonstration of a hand-held microchip-based analytical instrument for detection and identification of proteins and other biomolecules are reported. The overall system, referred to as muChemLab, has a modular design that provides for reliability and flexibility and that facilitates rapid assembly, fluid and microchip replacement, troubleshooting, and sample analysis. Components include two independent separation modules that incorporate interchangeable fluid cartridges, a 2-cm-square fused-silica **microfluidic** chip, and a miniature laser-induced fluorescence detection module. A custom O-ring sealed manifold plate connects chip access **ports** to a fluids cartridge and a syringe injection **port** and provides sample introduction and world-to-chip **interface**. Other novel **microfluidic** connectors include capillary needle fittings for fluidic connection between septum-sealed fluid reservoirs and the manifold housing the chip, enabling rapid chip priming and fluids replacement Programmable high-voltage power supplies provide bidirectional currents up to 100 muA at 5000 V, enabling real-time current and voltage monitoring and facilitating troubleshooting and methods development. Laser-induced fluorescence detection allows picomolar (10-11 M) detection sensitivity of fluorescent dyes and nanomolar sensitivity (10 -9 M) for fluorescamine-**labeled** proteins. Migration time reproducibility was significantly improved when separations were performed under constant current control (0.5-1%) as compared to constant voltage control (2-8%). 18 Refs.

L6 ANSWER 11 OF 18 INSPEC (C) 2006 IEE on STN
ACCESSION NUMBER: 2006:8698017 INSPEC
TITLE: A simple **microfluidic** system for efficient capillary electrophoretic separation and sensitive fluorimetric detection of DNA fragments using light-emitting diode and liquid-core waveguide techniques
AUTHOR: Shi-Li Wang; Xiao-Feng Fan; Zhang-Run Xu; Zhao-Lun Fang (Res. Center for Anal. Sci., Northeastern Univ., Shenyang, China)
SOURCE: Electrophoresis (Oct. 2005), vol.26, no.19, p. 3602-8, 21 refs.
CODEN: ELCTDN, ISSN: 0173-0835
SICI: 0173-0835(200510)26:19L.3602:SMSE;1-#
Published by: Wiley-VCH, Germany
DOCUMENT TYPE: Journal
TREATMENT CODE: Practical; Experimental
COUNTRY: Germany
LANGUAGE: English
AN 2006:8698017 INSPEC
AB A miniaturized CE system has been developed for fast DNA separations with sensitive fluorimetric detection using a rectangle type light-emitting diode (LED). High sensitivity was achieved by combining liquid-core waveguide (LCW) and lock-in amplification techniques. A Teflon AF-coated silica capillary on a compact 6 + 3 cm baseplate served as both the separation channel for CE separation and as an LCW for light transmission of fluorescence emission to the detector. An electronically modulated LED illuminated transversely through a 0.2 mm aperture, the detection point on the LCW capillary without focusing, and fluorescence light was transmitted to the capillary outlet. To simplify the optics and enhance collection of light from the capillary outlet, an outlet reservoir was

designed, with a light transmission window, positioned directly in front of a photomultiplier tube (PMT), separated only by a high pass filter. Automated sample introduction was achieved using a sequential injection system through a split-flow **interface** that allowed effective release of gas bubbles. In the separation of a ΦX174 HaeIII DNA digest sample, using ethidium bromide as **labeling** dye, all 11 fragments of the sample were effectively resolved in 400 s, with an S/N ratio comparable to that of a CE system with more sophisticated LIF

L6 ANSWER 12 OF 18 INSPEC (C) 2006 IEE on STN
ACCESSION NUMBER: 2005:8634345 INSPEC
DOCUMENT NUMBER: A2005-24-8790-003; B2005-12-2575F-039; C2005-12-7330-632
TITLE: The application of an innovative MEMS protein chip in real-time total internal reflection fluorescence microscopy
AUTHOR: Yen, Y.K.; Lee, J.Y.; Kuo, M.C.; Huang, L.S. (Inst. of Appl. Mech., Nat. Taiwan Univ., Taipei, Taiwan)
SOURCE: 2005 IEEE International Conference on Mechatronics (IEEE Cat. No. 05EX1025), 2005, p. 280-3 of xvii+981 pp., 5 refs.
ISBN: 0 7803 8998 0
Price: 0-7803-8998-0/05/$20.00
Published by: IEEE, Piscataway, NJ, USA
Conference: 2005 IEEE International Conference on Mechatronics, Taipei, Taiwan, 10-12 July 2005
Sponsor(s): IEEE Ind. Electron. Soc. (IES); Chinese Inst. of Autom. Eng. (CIAE); Nat. Sci. Council, Taiwan, R.O.C.; Minist. of Educ., Taiwan, R.O.C
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Practical; Theoretical
COUNTRY: United States
LANGUAGE: English
AN 2005:8634345 INSPEC DN A2005-24-8790-003; B2005-12-2575F-039; C2005-12-7330-632
AB Single biomolecular detection and real-time motion tracking of an anti-IgG molecule in a microchannel was successfully demonstrated by using total internal reflection fluorescence (TIRF) microscopy. Fluorescence-**labeled** biomolecules were excited at the transparent near-wall region by the evanescent wave which occurred at the optically index-mismatch **interface**. The MEMS-based microchannels biochip was also well designed and fabricated to exploit to monitor the motion of a single biomolecule in the near-wall flow layer. The motion of a single anti-IgG molecule has been tracked and analyzed under the speed limit 6 mm/s of image capturing system. The 3D positions of a molecule were also plotted to illustrate the biomolecular trajectory

L6 ANSWER 13 OF 18 INSPEC (C) 2006 IEE on STN
ACCESSION NUMBER: 2005:8622074 INSPEC
DOCUMENT NUMBER: A2005-24-8780-017
TITLE: Diffusion based analysis in a sheath flow microchannel: the sheath flow T-sensor
AUTHOR: Munson, M.S.; Hawkins, K.R.; Hasenbank, M.S.; Yager, P. (Dept. of Bioeng., Washington Univ., Seattle, WA, USA)
SOURCE: Lab on a Chip (Aug. 2005), vol.5, no.8, p. 856-62, 22 refs.
CODEN: LCAHAM, ISSN: 1473-0197
SICI: 1473-0197(200508)5:8L.856:DBAS;1-#
Published by: R. Soc. Chem, UK
DOCUMENT TYPE: Journal
TREATMENT CODE: Practical; Experimental
COUNTRY: United Kingdom
LANGUAGE: English

AN 2005:8622074 INSPEC DN A2005-24-8780-017
AB This paper describes a **microfluidic** channel that allows for diffusion-based analysis of adsorbing species without passivation of the channel surfaces. The sheath flow configuration was used to measure the diffusion coefficient of fluorescently **labeled** species from their spatial distribution within the microchannel by analyzing the derivative of the intensity profile at the **interface** between two distinct core fluids. Measurements for both a small molecule (rhodamine B) and an intermediate-sized protein (wheat germ agglutinin) were made, demonstrating the utility of the sheath flow T-sensor

L6 ANSWER 14 OF 18 INSPEC (C) 2006 IEE on STN
ACCESSION NUMBER: 2005:8343101 INSPEC
DOCUMENT NUMBER: A2005-10-8780-013; B2005-05-7510J-028
TITLE: The potential of autofluorescence for the detection of single living cells for label-free cell sorting in **microfluidic** systems
AUTHOR: Emmelkamp, J.; Wolbers, F.; Andersson, H.; (Lab-on-a-Chip Group, Twente Univ., Netherlands), DaCosta, R.S.; Wilson, B.C.; Vermes, I.; van den Berg, A.
SOURCE: Electrophoresis (Nov. 2004), vol.25, no.21-22, p. 3740-5, 14 refs.
CODEN: ELCTDN, ISSN: 0173-0835
SICI: 0173-0835(200411)25:21/22L.3740:PADS;1-2
Published by: Wiley-VCH, Germany
DOCUMENT TYPE: Journal
TREATMENT CODE: Practical; Experimental
COUNTRY: Germany
LANGUAGE: English
AN 2005:8343101 INSPEC DN A2005-10-8780-013; B2005-05-7510J-028
AB A novel method for studying unlabeled living mammalian cells based on their autofluorescence (AF) signal in a prototype **microfluidic** device is presented. When combined, cellular AF detection and **microfluidic** devices have the potential to facilitate high-throughput analysis of different cell populations. To demonstrate this, unlabeled cultured cells in **microfluidic** devices were excited with a 488 nm excitation light and the AF emission (> 505 nm) was detected using a confocal fluorescence microscope (CFM). For example, a simple microfluidic **three**-port **glass** microstructure was used together with conventional electroosmotic flow (EOF) to switch the direction of the fluid flow. As a means to test the potential of AF-based cell sorting in this microfluidic **device**, granulocytes were successfully differentiated from human red blood cells (RBCs) based on differences in AF. This study demonstrated the use of a simple microfabricated device to perform high-throughput live cell detection and differentiation without the need for cell-specific fluorescent labeling **dyes** and thereby reducing the sample preparation time. Hence, the combined use of microfluidic **devices** and cell AF may have many applications in single-cell analysis

L6 ANSWER 15 OF 18 INSPEC (C) 2006 IEE on STN
ACCESSION NUMBER: 2005:8246134 INSPEC
DOCUMENT NUMBER: A2005-04-8760G-004; B2005-02-7510-137
TITLE: Microwave transmission line dielectric probe to detect biomolecular surface interactions
AUTHOR: Qin Chen; (Dept. of Electr. & Comput. Eng., California Univ., Davis, CA, USA), McMurdie, J.; Roitman, D.; Knoesen, A.
SOURCE: Conference Proceedings. 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE Cat. No.04CH37558), Vol.3, 2004, p. 1990-3 Vol.3 of 7 vol. (lxxxvii+5459) pp., 13 refs.
ISBN: 0 7803 8439 3

Price: 0-7803-8439-3/04/$20.00
Published by: IEEE, Piscataway, NJ, USA
Conference: Conference Proceedings. 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Francisco, CA, USA, 1-5 Sept. 2004
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Practical; Experimental
COUNTRY: United States
LANGUAGE: English
AN 2005:8246134 INSPEC DN A2005-04-8760G-004; B2005-02-7510-137
AB A probe was developed to detect biomolecular binding events at a liquid-solid **interface** in the microwave regime in real time and without using fluorescence **labels**. The probe consists of a coplanar transmission line (CTL) fabricated on a glass slide that can detect dielectric changes in close proximity of the **interface**. The CTL geometry concentrates the electric flux density in the gap region between the signal and ground electrodes and makes it very sensitive to permittivity changes at the liquid-solid **interface**. The probe operation was demonstrated by immobilizing protein A on the glass surface and detecting rabbit IgG molecules in a flow channel. The sensitivity was conservatively estimated to be 100 pg/mm2

L6 ANSWER 16 OF 18 INSPEC (C) 2006 IEE on STN
ACCESSION NUMBER: 2003:7675710 INSPEC
DOCUMENT NUMBER: A2003-16-4755K-011
TITLE: Flow profile near a wall measured by double-focus fluorescence cross-correlation
AUTHOR: Lumma, D.; Best, A.; Gansen, A.; (Max-Planck-Inst. fur Polymerforschung, Mainz, Germany), Feuillebois, F.; Radler, J.O.; Vinogradova, O.I.
SOURCE: Physical Review E (Statistical, Nonlinear, and Soft Matter Physics) (May 2003), vol.67, no.5, p. 56313-1-10, 42 refs.
CODEN: PLEEE8, ISSN: 1063-651X
SICI: 1063-651X(200305)67:5L.56313:FPNW;1-H
Price: 1063-651X/2003/67(5)/056313(10)/$20.00
Doc.No.: S1063-651X(03)033RE-2
Published by: APS through AIP, USA
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: United States
LANGUAGE: English
AN 2003:7675710 INSPEC DN A2003-16-4755K-011
AB We present an experimental approach to flow profiling within femtoliter sample volumes, which allows the high-precision measurements at the solid **interface**. The method is based on the spatial cross-correlation of the fluorescence response from **labeled** tracer particles (latex nanospheres or single dye molecules). Two excitation volumes, separated by a few micrometers, are created by two laser foci under a confocal microscope. The velocity of tracer particles is measured in a channel about 100 μm wide within a typical accuracy of 0.1%, and the positions of the walls are estimated independently of any hydrodynamic data. The underlying theory for the optical method is given for an arbitrary velocity profile, explicitly presenting the numerical convolutions necessary for a quantitative analysis. It is illustrated by using the Poiseuille flow of a Newtonian liquid with slip as an example. Our analysis yields a large apparent fluid velocity at the wall, which is mostly due to the impact of the colloidal (electrostatic) forces. This colloidal lift is crucially important in accelerating the transport processes of molecules and nanoparticles in **microfluidic** devices

L6 ANSWER 17 OF 18 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 2002:7328384 INSPEC
DOCUMENT NUMBER: A2002-17-8780-047; B2002-08-7500-015; C2002-08-3385-044
TITLE: Evaporation-driven **microfluidic** sample concentration
AUTHOR: Walker, G.M.; Beebe, D.J. (Dept. of Biomed. Eng., Wisconsin Univ., Madison, WI, USA)
SOURCE: 2nd Annual International IEEE-EMBS Special Topic Conference on Microtechnologies in Medicine and Biology. Proceedings (Cat. No.02EX578), 2002, p. 523-6 of xix+568 pp., 11 refs., Also available on CD-ROM in PDF format
Editor(s): Dittmar, A.; Beebe, D.
ISBN: 0 7803 7480 0
Price: 0-7803-7480-0/02/$17.00
Published by: IEEE, Piscataway, NJ, USA
Conference: 2nd Annual International IEEE-EMBS Special Topic Conference on Microtechnologies in Medicine and Biology. Proceedings, Madison, WI, USA, 2-4 May 2002
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Practical; Experimental
COUNTRY: United States
LANGUAGE: English
AN 2002:7328384 INSPEC DN A2002-17-8780-047; B2002-08-7500-015; C2002-08-3385-044
AB A new method for sample concentration within **microfluidic** devices is presented. Evaporation at an air/liquid **interface** is used to induce flow. within a **microfluidic** device and concentrate sample. The practicality of this method was demonstrated with 0.2 μm fluorescent microspheres and FITC- **labeled** bovine serum albumin (BSA). Eighty one percent of a 0.6 μL fluorescent sphere suspension was concentrated into a well within a **microfluidic** device. In the same amount of time, 93% of a 0.6 μL FITC-**labeled** BSA solution was concentrated

L6 ANSWER 18 OF 18 INSPEC (C) 2006 IEE on STN
ACCESSION NUMBER: 2001:6806097 INSPEC
DOCUMENT NUMBER: A2001-03-8780-025; B2001-02-7510J-049
TITLE: Optical detection of molecular beacons in **microfluidic** devices
AUTHOR: Balberg, M.; (Beckman Inst. for Adv. Sci. & Technol., Illinois Univ., Urbana, IL, USA), Hristova, K.; Brady, D.J.; Beebe, D.J.; Raskin, L.
SOURCE: 1st Annual International IEEE-EMBS Special Topic Conference on Microtechnologies in Medicine and Biology. Proceedings (Cat. No.00EX451), 2000, p. 425-8 of xviii+643 pp., 7 refs.
Editor(s): Dittmar, A.; Beebe, D.
ISBN: 0 7803 6603 4
Price: 0 7803 6603 4/2000/$10.00
Published by: IEEE, Piscataway, NJ, USA
Conference: 1st Annual International IEEE-EMBS Special Topic Conference on Microtechnologies in Medicine and Biology. Proceedings, Lyon, France, 12-14 Oct. 2000
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Practical
COUNTRY: United States
LANGUAGE: English
AN 2001:6806097 INSPEC DN A2001-03-8780-025; B2001-02-7510J-049
AB Hybridization and detection of E. coli ribosomal RNA with molecular beacons **labeled** with a fluorescent dye is achieved in a **microfluidic** device. The device consists of a four **ports** mixing chamber, where the probes and the target molecules mix by diffusion. The weak fluorescent signal is detected by two large core

optical fibers that are placed on both sides of the channel and collect the light emitted in both directions. The fibers are coupled to a spectrophotometer. The detection limit for the system is 0.2 fmol

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FULL ESTIMATED COST	65.42	77.40

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CA SUBSCRIBER PRICE	-5.25	-6.00

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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Feb 24, 2006 (20060224/UP).